



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
09/679,590	10/04/2000	Jeb R. Linton	45118-00026	7330
75	90 04/21/2006		EXAM	INER
Jeffrey A Divney			BROWN, RUEBEN M	
Marsh Fischmann & Breyfogle LLP Suite 411			ART UNIT	PAPER NUMBER
3151 South Vaughn Way			2623	
Aurora, CO 80014			DATE MAILED: 04/21/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

_						
	Application No.	Applicant(s)				
	09/679,590	LINTON, JEB R.				
Office Action Summary	Examiner	Art Unit				
	Reuben M. Brown	2623				
 The MAILING DATE of this communication app Period for Reply 	ears on the cover sheet with the c	correspondence address —				
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DA - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period w - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tin fill apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).				
Status						
1) Responsive to communication(s) filed on 02 Fe	ebruary 2006.					
, <u> </u>	- · · · · · · · · · · · · · · · · · · ·					
•						
closed in accordance with the practice under E	x parte Quayle, 1935 C.D. 11, 45	53 O.G. 213.				
Disposition of Claims						
4)⊠ Claim(s) <u>1-11 and 13-24</u> is/are pending in the application.						
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-11 & 13-24</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or	election requirement.					
Application Papers						
9)☐ The specification is objected to by the Examiner	г.					
10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.						
Applicant may not request that any objection to the o	drawing(s) be held in abeyance. See	e 37 CFR 1.85(a).				
Replacement drawing sheet(s) including the correcti						
11) The oath or declaration is objected to by the Example 11.	aminer. Note the attached Office	Action or form PTO-152.				
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of:	priority under 35 U.S.C. § 119(a)	-(d) or (f).				
1. Certified copies of the priority documents have been received.						
Certified copies of the priority documents	s have been received in Applicati	on No				
Copies of the certified copies of the prior		ed in this National Stage				
application from the International Bureau	·					
* See the attached detailed Office action for a list of	of the certified copies not receive	d.				
Attachment(s)						
Notice of References Cited (PTO-892)	4) Interview Summary					
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	Paper No(s)/Mail Da 5) Notice of Informal P	ate atent Application (PTO-152)				
Paper No(s)/Mail Date	6) Other:					

Application/Control Number: 09/679,590

Art Unit: 2623

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/2/2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Art Unit: 2623

2. Claims 1-6, 8-10, 11, 14-20 & 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sklar, in view of Ayyagari, (U.S. Pat # 6,018,659) and Eguchi, (U.S. pat # 5,537,122).

Considering amended claims 1, 11 & 17, the claimed system for receiving broadcast satellite transmissions in one of air based, land based, and a sea based vehicle, comprising:

'an orientation system for determining at least a first orientation of the vehicle in three dimensions', reads on the operation of the aircraft inertial navigation system, INS which provides position and attitude data of the airplane to the controller 46, of Sklar, col. 8, lines 30-62.

'a controller communicating with the orientation system, which is adapted to receive the orientation data and receive a first location data corresponding to a first location of the vehicle relative to a predetermined positioning system, such that the controller utilizes the first orientation data and first location data to determine a first position control data', is met by the operation of the controller 46, which receives information data from the INS/GPS receiver, col. 8, lines 45-62.

As for the additionally claimed, 'one dimensionally electronically pointable antenna mounted upon a motorized turntable to provide two-dimensional pointing and adapted to receive

the first position control data from the controller, resulting in the one dimensionally electronically pointable antenna being pointable in two-dimensions in an open-loop operation, so that a first broadcast satellite signal may be received according to the first position control data, from a satellite having a known location relative to the predetermined positioning system', Sklar teaches that the antenna 38 is pointed at one or more of the satellites 24 or 28 and continuously steered by controller 46, according to the data received from its INS and/or GPS system, col. 6, lines 4-20 & col. 8, lines 45-62.

Regarding the specifically claimed one dimensionally electronically pointable antenna, Sklar discloses that the antenna 38 may or may not be parabolic, col. 3, lines 11-20, which suggests that antennas other than parabolic type may be used. Ayyagari provides a teaching using a phased array antenna (which reads on one dimensionally pointable antenna) for airborne vehicles, in order to track a target satellite, see col. 5, lines 45-50 & col. 6, lines 1-20. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Sklar with the teachings of Ayyagari using the phased array antenna, at least for the known benefit of a simpler design, other than the parabolic antennas optionally used in Sklar.

'a direct broadcast satellite receiver adapted to process a first RF signal corresponding to the first broadcast satellite signal received by the electronically-pointable antenna to produce at least one of audio, video and data' is met by Sklar, col. 5, lines 59-64 & col. 8, lines 63-67.

Application/Control Number: 09/679,590 Page 5

Art Unit: 2623

As for the additionally claimed, 'a closed-loop feedback system adapted to provided at least one output signal wherein the one dimensionally electronically pointable antenna is pointable in two-dimensions using at least one output signal from the closed-loop operation to receive the broadcast satellite signal', Sklar does not discuss any closed-loop operation.

However, Fukushima, which is in the same field of endeavor discloses an antenna tracking system that is enabled to use both open-loop and closed-loop operation, col. 5, lines 60-67; col. 6, lines 1-67 & col. 7, lines 1-33. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Sklar with the feature of closed-loop operation, at least for the advantage of controlling the antenna orientation, at least partially on the basis of the target signal receiving condition, as taught by Eguchi, col. 4, lines 50-65.

'a signal lock for automatically activating and deactivating the closed-loop system in response to the first broadcast satellite signal received by the one dimensionally electronically pointable antenna, such that the system is alternatively in closed-loop or open-loop operation' is met by the disclosure of Fukushima, that teaches closed-loop operation is activated and terminated based on the signal level, which meets that claimed subject matter, col. 2, lines 45-52; col. 5, lines 61-67; col. 6, lines 31-48 & col. 7, lines 21-32.

Considering claims 2 & 19, see Fig. 5A & 5B in Eguchi.

Application/Control Number: 09/679,590

Art Unit: 2623

Considering claim 3, the claimed at least output signal controlling a rotational orientation of the turntable is also met by Fukushima, col. 6, lines 31-67 & col. 7, lines 25-31, which teaches that the closed-loop operation uses the receiving signal level, in its antenna control sequence.

Considering claim 4, as pointed out in the rejection of claim 1, Ayyagari teaches the use of phased array antennas, col. 5, lines 45-50. Also see Eguchi, col. .4, lines 55-60.

Considering claim 5, the antenna 10 of Eguchi is disclosed to be substantially flat within a plane, see Fig. 1B. The angle that the antenna 10 of Eguchi points is relative to the plane.

Considering claims 6 & 20, electronic compass & tilt-sensor are necessarily included in the inertial navigation system, INS of Sklar, col. 8, lines 30-61.

Considering claim 8, the claimed technique of an open-loop control using GPS data, corresponds with subject matter mentioned above in the rejection of claim 1, and is likewise treated.

Considering claim 9, the disclosure of Eguchi of switching modes based on the detected signal strength, (col. 6, lines 20-35) reads on the claimed feature of 'detecting a first loss of the first broadcast satellite signal and to activate the open-loop operation'.

Considering claim 10, the closed loop operation also controls the turntable and look angle of the antenna system, see Fig. 3 & col. 6, lines 44-54.

Considering claim 14, regarding the claimed feature of storing the orbiting position of a satellite, Sklar teaches tracking the coordinates of the satellites 24 & 28, see col. 8, lines 29-67. Official Notice is taken that at the time the invention was made, memory for storing satellite information was old in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Sklar to store the known orbit of a satellite, at least for the desirable effect of enabling the IFE to plan programming so that passengers could be warned well in advance as to which broadcasts will be available for the duration of their flight.

Considering claims 15 & 22, the GPS system of Sklar meets the claimed subject matter.

Considering claim 16, see Sklar, col. 5, lines 59-65.

Considering claim 18, see Eguchi, col. 6, lines 10-35.

Considering claims 23 & 24, see Eguchi col. col. 6, lines 5-65 thru col. 7, lines 1-50.

3. Claims 7 & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sklar, Ayyagari & Eguchi, further in view of Donahue, (U.S. Pat # 5,526,022).

Application/Control Number: 09/679,590 Page 8

Art Unit: 2623

Considering claims 7 & 21, Sklar discusses orientating the airplane and controlling the antenna at least using the airplane navigational system, but does not teach using solid-state electromagnetic field sensor and fluid field sensor. However, Donahue teaches an orientation system with a wide applicability, (col. 14, lines 24-45) such as any automatic leveling device, robotic feedback control, and motorized moving equipment, which uses both the earth's magnetic field and a fluid tilt sensor in determining the desired orientation, see col. 3, lines 1-12; col. 7, lines 59-67 & col. 9, lines 11-31. It would have been obvious for one of ordinary skill in the art at the time the invention was filed, to operate the navigation system of Sklar using the electromagnetic field sensor and fluid tilt field sensor used in Donahue, at least for the desirable benefit of more accurately determining the proper orientation of a device, as taught by Donahue, col. 1, lines 45-49, which obviates the need to rely solely on the existence of a fixed object in determining the orientation of another object.

3. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Sklar, Ayyagari, Eguchi & Lazar, (U.S. Pat # 6,166,686).

Considering claim 13, Sklar discloses the use of well-known GPS system for orienteering, but does not disclose that the true north is also used. However, Lazar teaches utilizing the GPS to determine location and then deriving the true north using the magnetic north, Abstract; col. 3, lines 8-55 & col. 4, lines 5-51. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Sklar, to determine the true north

Art Unit: 2623

bearing for the known improvement of more effective orienteering, since there is often wide deviation between magnetic north, which is based on the earth's magnetic field lines, and can be found with a compass, and 'true north', which is needed when reading a map to navigate to another object, as taught by Lazar, col. 1, lines 10-55.

Conclusion

- 4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- A) Chang Electronic Directional antenna.
- B) Park Tracking antenna.

Application/Control Number: 09/679,590 Page 10

Art Unit: 2623

Any response to this action should be mailed to:

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 www.uspto.gov

or faxed to:

(571) 273-8300, (for formal communications intended for entry)

Or:

(571) 273-7290 (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Reuben M. Brown whose telephone number is (571) 272-7290. The examiner can normally

be reached on M-F (9:00-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization

where this application or proceeding is assigned is (571) 273-8300 for regular communications and After

Final communications.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Reuben M. Brown

REUBEN M. BROWN